



DIVISION OF
CORPORATION FINANCE

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

March 7, 2013

Via E-mail

Panna L. Sharma
Chief Executive Officer
Cancer Genetics, Inc.
201 Route 17 North, 2nd Floor
Rutherford, NJ 07070

**Re: Cancer Genetics, Inc.
Amended Registration Statement on Form S-1
Filed March 4, 2013
File No. 333-178836**

Dear Mr. Sharma:

We have reviewed your amended registration statement and have the following comments. In some of our comments, we may ask you to provide us with information so we may better understand your disclosure.

Please respond to this letter by amending your registration statement and providing the requested information. If you do not believe our comments apply to your facts and circumstances or do not believe an amendment is appropriate, please tell us why in your response.

After reviewing any amendment to your registration statement and the information you provide in response to these comments, we may have additional comments.

General

1. We note that you have removed disclosure relating to the write-off of \$900,000 in offering expenses by certain company service providers. With a view to clarifying disclosure, please identify each service provider and the amounts of the associated fees, and advise us of the underlying events and reasons for removing the disclosure. If fees were waived by your auditor, provide your analysis of why you believe the auditor is qualified and independent as required by Article 2-01 of Regulation S-X. For example, please advise us why you believe a waiver of fees does not create a mutual or conflicting interest between the accountant and the audit client; and tell us why you believe it does not place the accountant in a position of being an advocate for the audit client. In this regard, we refer you to Example 3 of Section 602.02.b.iv. of the Financial Reporting Codification.

Management's Discussion and Analysis, page 54

2. Please revise the discussion of your cash and cash equivalents on page 75 to also quantify your total outstanding indebtedness as of the most recent practicable date. To clarify the extent of your liquidity deficiency, please also quantify the approximate rate of cash outflows assuming your current level of operations.
3. We note revised disclosure on page 68 regarding the 355% increase in direct bill customers. It appears that direct bill sales, and the relatively lower per test revenues associated with them, are having or are reasonably expected to have a material impact on your net sales, revenues and income from continuing operations. Please revise to further address the trend. Refer to SEC Release 33-8350 (December 19, 2003) for guidance.
4. We note the reduction in the estimated offering proceeds. It appears that your landlord agreed to defer terms of the lease in anticipation of "a capital raise of at least \$20.0 million." Please revise page 76 to address the extent to which the decreased estimated proceeds may affect your lease.

We urge all persons who are responsible for the accuracy and adequacy of the disclosure in the filing to be certain that the filing includes the information the Securities Act of 1933 and all applicable Securities Act rules require. Since the company and its management are in possession of all facts relating to a company's disclosure, they are responsible for the accuracy and adequacy of the disclosures they have made.

Notwithstanding our comments, in the event you request acceleration of the effective date of the pending registration statement please provide a written statement from the company acknowledging that:

- should the Commission or the staff, acting pursuant to delegated authority, declare the filing effective, it does not foreclose the Commission from taking any action with respect to the filing;
- the action of the Commission or the staff, acting pursuant to delegated authority, in declaring the filing effective, does not relieve the company from its full responsibility for the adequacy and accuracy of the disclosure in the filing; and
- the company may not assert staff comments and the declaration of effectiveness as a defense in any proceeding initiated by the Commission or any person under the federal securities laws of the United States.

Please refer to Rules 460 and 461 regarding requests for acceleration. We will consider a written request for acceleration of the effective date of the registration statement as confirmation of the fact that those requesting acceleration are aware of their respective responsibilities under

Panna L. Sharma
Cancer Genetics, Inc.
March 7, 2013
Page 3

the Securities Act of 1933 and the Securities Exchange Act of 1934 as they relate to the proposed public offering of the securities specified in the above registration statement. Please allow adequate time for us to review any amendment prior to the requested effective date of the registration statement.

You may contact Joanna Lam, Staff Accountant, at (202) 551-3476 or John Archfield, Senior Staff Accountant, at (202) 551-3315 if you have questions regarding comments on the financial statements and related matters. Please contact Erin Wilson, Legal Examiner, at (202) 551-6047 or Jim Lopez, Legal Branch Chief, at (202) 551-3536 with any other questions.

Sincerely,

/s/ James Lopez (for)

John Reynolds
Assistant Director